**Sreenidhi institute of science AND technology**

**(An Autonomous Institution approved by UGC and affiliated to JNTUH))**

**(Accredited by NAAC with ‘A” Grade, Accredited by NBA of AICTE and**

**Recipient of World Bank under TEQIP-I and II )**

**Yamnampet, Ghatkesar Mandal, Hyderabad - 501 301.**

COURSE FILE

FOR

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA**

FOR

**B. Tech. II year - I Semester**

**Computer Science and Engineering**

****

**DEPARTMENT**

**OF**

**Computer Science and Engineering**

**September 2023**

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| **PO’s** | 1 | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **Level** | **H** |  | **H** |  |  |  |  |  |  |  |  |  |

H: High, M: Medium, L: Low Correlation

#### Syllabus for B.Tech. II year I Semester

#### Computer Science and Engineering

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA**

**(Common to CSE, IT and ECM)**

|  |  |  |  |
| --- | --- | --- | --- |
| **L** | **T** | **P/D** | **C** |
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**Code: 8EC02**

**Course Objective:**

Understand the concepts of Object oriented programming principles of Java. Write the programs and execute using OOP Principles such as garbage collection, overloading methods, constructors, recursion, string handling, StringTokenizer, inheritance and its types, packages, multithreading and threads.

#### Course Outcomes:After completion of the course, the student will be able to:

1. Understand and comprehend the fundamentals of JAVA, its Classes, and Objects and write simple programs using constructors.
2. Write programs using inheritance, interface and packages.
3. Implement programs using Packages, I/O Stream and collections.
4. Implement Exception handling and Multithreading.
5. Design programs using AWT, Swings and develop applications using event handling.
6. Develop applications using Applets and develop client server programs using networking concepts.

#### UNIT I

History of Java, Java buzzwords, datatypes, variables, simple java program, scope and life time of variables, operators, expressions, control statements, type conversion and costing, arrays,, classes and objects – concepts of classes, objects, constructors, methods, access control, this keyword, garbage collection, overloading methods and constructors, recursion, string handling,StringTokenizer.

Applications: Basic operations on the bank account of a customer.

#### UNIT II

Inheritance –Definition, single inheritance, benefits of inheritance, Member access rules, super class, polymorphism- method overriding, Dynamic method dispatch, using final with inheritance, abstract classes, Base classobject.

Interfaces: definition, variables and methods in interfaces, differences between classes and interfaces, usage of implements and extends keyword, interfaces, uses of interfaces, packages Applications: Extending the banking operations to the loan applicants.

#### UNIT III

Packages: Definition, types of packages, Creating and importing a user defined package. Introduction to I/O programming: DataInputStream, DataOutputStream, FileInputStream,FileOutputStream, BufferedReader.

Collections: interfaces, Implementation classes, and Algorithms (such as sorting and searching).

Applications: Searching for a string in the text. PNR status check, students’ result sorting.

#### UNIT IV

Exception handling -exception definition, benefits of exception handling, exception hierarchy, usage of try, catch, throw, throws and finally, built in exceptions, creating own exception sub classes.

Multi-Threading: Thread definition, types of multitasking, uses of multitasking, thread life cycle, creating threads using Thread class and Runnable interface, synchronizing threads, daemon thread.

Applications: Illegal entry handling in the registration form. (Example: entering incorrect intermediate hall-ticket number in EAMCET Registration form)

#### UNIT V

Advantages of GUI over CUI ,The AWT class hierarchy, Introduction to Swings, Swings Elements:- JComponent, JFrame, user interface components- JLabels, JButton, JScrollbars, text components, check box, check box groups, choices, lists panels – scrollpane, menubar, graphics, layout, managers –boarder, grid, flow, card and grid bag.

Event handling: Delegation event model, closing a Frame, mouse and keyboard events, Adapter classes.

Applications: developing calculator, developing feedback form, developing bio data.

#### UNIT VI

Applets – Concepts of Applets, differences between applets and applications, life cycle of an applet, types of applets, creating applets, passing parameters to applets.

Applications: Developing of simple advertisements.

Networking – Basics of network programming, addresses, ports, sockets, simple client server program, multiple clients, sending file from server to client.

Applications: One to one Chat application

#### TEXT BOOKS:

1. Java; the complete reference, 6th edition, Herbert Schildt,TMH.
2. Introduction to Java programming 6th edition, Y. Daniel Liang, Pearsoneducation.

#### REFERENCES:

1. Core Java 2, Vol 1, Fundamentals, Cay. S. Horstmann and Gary Cornell, seventh Edition, PearsonEducation.
2. Core Java 2, Vol 2, Advanced Features, Cay. S. Horstmann and Gary Cornell, Seventh Edition, PearsonEducation

**Lecture Schedule**

|  |  |  |
| --- | --- | --- |
| **SNO** | **TOPIC NAME** | **LECTURE NO** |
| **UNIT I** | | |
| 1 | History of JAVA | L1 |
| 2 | Java buzzwords | L2 |
| 3 | Data Types, Variables | L3 |
| 4 | Creating a simple java program, compiling and running, Scope and lifetime of variables | L4 |
| 5 | Operators, expressions, Control Statements | L5 |
| 6 | Type conversion and casting | L6 |
| 7 | Arrays, classes and objects, Concepts of classes, constructors and methods | L7,L8,L9 |
| 8 | Access control, this keyword, garbage collection | L10 |
| 9 | Overloading methods and constructors | L11 |
| 10 | Recursion, String handling, String Tokenizer. | L12,L13 |
| **UNIT II** | | |
| 11 | Inheritance definition, single inheritance, benefits of inheritance | L14,L15 |
| 12 | Member access rules | L16 |
| 13 | Super classes | L17 |
| 14 | Polymorphism, method overriding, Dynamic method dispatch, | L18,L19 |
| 15 | Using final with inheritance, abstract classes | L20,L21 |
| 16 | Base class object | L22 |
| 17 | Defining an interface, implementing interface, Differences between classes and interfaces | L23,L24 |
| 18 | Implements and extends keywords, An application using an interfaces and uses of interfaces | L25 |
| **UNIT III** | | |
| 19 | Defining, Creating and Accessing a Package, Types of packages | L26 |
| 20 | Understanding CLASSPATH, importing packages | L27 |
| 21 | Introduction to i/o programming: DataInputStream, DataOutputStream | L28,L29 |
| 22 | FileInputStream, FileOutputStream, BufferedReader. | L30 |
| 23 | Collections: Interfaces, Implementation classes, and Algorithms(Such as sorting and searching) | L31,32 |
| **UNIT IV** | | |
| 24 | Concepts of Exception handling, Exception hierarchy,benefits of exception handling, | L32 |
| 25 | Types of exceptions, usage of try, catch, throw, throws, finally keywords | L33,L34 |
| 26 | Built in Exceptions, Creating own Exception sub classes | L35 |
| 27 | Concepts of multi threading, types of multi tasking, uses of multitasking | L36 |
| 28 | Thread life cycle, creating multiple threads by using Thread class | L37 |
| 29 | Creating multiple threads by using Runnable interface | L38 |
| 30 | Synchronization, thread life cycle,daemon thread. | L39,L40 |
| **UNIT V** | | |
| 31 | Advantages of GUI over CUI, The AWT class hierarchy | L41 |
| 32 | Introduction to Swings, Swing Elements:JComponent, | L42 |
| 33 | JFrame,User interface components, | L43 |
| 34 | JLabel, JButton, JScrollbars,textcomponents,check box, check box groups, | L44,L45 |
| 35 | choices, lists panels- scrollpane, menubar, | L46 |
| 36 | Layout manager board, grid, flow, card, grid bag. | L47 |
| 37 | Event handling: Delegation Event model | L48 |
| 38 | Closing a frame, mouse and keyboard events | L49 |
| 39 | Adapter classes. | L50,L51,L52 |
| **UNIT VI** | | |
| 40 | Concepts of Applets, differences between applets and, Applications | L53 |
| 41 | Life cycle of an applet | L54 |
| 42 | Types of applets, creating applets, passing parameters to applets | L55 |
| 43 | Basics of Networking, TCP/IP Sockets, Datagram’s | L56,L57 |
| 44 | Simple client server program | L58 |
| 45 | Multiple clients. | L59 |
| 46 | sending file from server to client. | L60 |

**Course Objectives**

**UNIT I**

After completion of this unit student will be able to

1. Explain Object Oriented Programming Concepts.

2. Learn about Java and its history.

3. Understand the relationship between Java and the internet.

4. Become familiar with Java buzz words.

5. Use Java primitive data types: byte, short, int, long, float, double, char and Boolean

6. Understand control statements and type conversion mechanisms.

7. Understand the concepts of classes and objects.

8. Write, compile and run simple Java program.

9. Write java programming using classes and various access control mechanisms.

10. Understand overloading methods and constructor.

**UNIT II**

After completion of this unit, student will be able to

1. Understand classes and objects and the relationship between them.

2. Understand hierarchical abstractions between classes.

3. Become familiar with different forms of inheritance.

4. Define a member access rules, super keyword.

6. Know the use of final with inheritance.

7. Understand overriding of methods.

8. Become familiar with abstract classes.

**UNIT III**

After completion of this unit, student will be able to

1. Understand how to use an interface

2. Compare & contrast classes and interfaces

3. Understand the CLASSPATH.

4. Become familiar with packages&Know how to import packages

5.Understands how to use I/O Streams and Collections.

**UNIT IV**

By undergoing this unit, student will be able to

1. Understand the concepts of exception handling

2. Become familiar with exception types

3. Know Throw exceptions in a method.

4. Use try – catch block to handle exceptions

5. Create your own exception classes

6. Understand the concepts of multi treading

7. Write threads by extending the thread class & by implementing Runnable

interface.

8. Understand the life cycle of a thread

9. Compare & contrast process & thread

10. Use thread Synchronization to avoid resource conflicts

**UNIT V**

After completion of this unit, student will be able to

1. Understand the concepts of event driven programming

2. Become familiar with java event delegation model

3. Know the AWT class hierarchy

4. Become familiar with the classes color, font, & graphics.

5. Use frames, panels, window, container components

6. Know how to handle keyboard & mouse events

7. Understand various layout managers.

8. Describe various user interface components button, label, text field, text area,

checkbox, checkbox group, lists, choice, scrollbars, and menus.

9. Create an interactive graphical user interface using the above components.

**UNIT VI**

After completion of this unit, student will be able to

1. Compare & contrast applet & application.

2. Become familiar about the life cycle of an applet.

3. Define socket, port, address and datagram.

4. Understand the process of network programming.

5. Write java networking programs.

**Assignment Questions**

**UNIT I**

**Straightforward (Knowledge)**

1. Define the following terms:

🡪Class

🡪Object

🡪Garbage Collection

🡪This pointer

🡪Constructor and Overloading.

2. Specify the types of access control.

3. Explain about the main concepts of object-oriented programming.

4. Explain various data types and operators in Java in detail with suitable examples.

5. List out the java buzzwords and explain in detail.

**Hard (Comprehension)**

1. Write a program for multiplying two matrices.

2. Write a program to demonstrate different types of parameter passing.

3. Write a program for constructor overloading.

**Application**

1. Create a class named “Clock”. It has the following attributes:

Hour (integer), Minutes (integer), Seconds (integer), isAM (boolean) - true if time is before 12:00 Noon and false if time is after 12:00 Noon.Class “Clock” should contain the following constructors:One with no attributes (sets clock to midnight), another with all attributes.Class “Clock” should support the following public methods:

getHours() - returns the Hours, getMinutes() - returns the Minutes, getSeconds() - returns the Seconds, getIsAM() - returns AM status.Class “Clock” also supports a setTime() method that sets all four attributes from argument values.

**Analysis**

1. Does java supports operator overloading? Justify your answer.

**UNIT II**

**Straightforward (Knowledge)**

1. Define an inheritance and mention types of inheritances.

2. What are benefits of inheritance?

3. Explain the following keywords.

a) final b) finalize c) Super d) Polymorphism

4. Explain briefly member access rules. .

**Hard (Comprehension)**

1. Write a java program that illustrates the concept of method overriding.

2. Write a java program that demonstrates the use of “super” keyword. (three uses)

3. Write a program to demonstrate dynamic method dispatch (ie., dynamic polymorphism).

**Application**

1. Write a program to calculate area and perimeter of rectangle and square by extending quadrilateral(4-sided polygon) class?

Hint:

class Quadrilateral{

intsideA, sideB, sideC, sideD;

public Quadrilateral(int a, int b, int c, int d){

sideA = a; sideB = b; sideC = c; sideD = d;

}

public int area(){

}

public int perimeter(){

}

}

**Analysis**

1. Does java supports multiple inheritance and justify.

2. Can we override the final method?

**UNIT III**

**Straightforward (Knowledge)**

1. Define an interface.

2. List the differences between class and interface.

3. Define the following keywords.

a) implements b) extends

4. Define a package.

5. Write the procedure to create a package and importing a package.

6. Explain input and output classes &BufferedReader classes.

**Hard (Comprehension)**

1. Write a program to implement an interface for calculating an area of

triangle, rectangle, and circle.

2. Create a class student for calculating average marks and store it in the

package snist.org

**Application**

1. Write methods add, subtract, multiply and division for integers, floats and complex numbers. Use interface and apply polymorphism to implement them.

**Unit IV**

**Straightforward (Knowledge)**

1. Define an exception.

2. Write the use of an exception handling.

3. Explain about the following keywords.

a) try b) catch c) throw d) throws e) finally

4. Define a thread.

5. Explain the life cycle of a thread.

6. Write a procedure to create a thread using Thread and Runnable interface.

7. Discuss about various methods of a thread class.

**Hard (Comprehension)**

1. Write a program to handle ArrayIndexOutOfBoundsException,Divide

byZeroExceptions.

2. Write a program that takes input from the user and checks whether the given input is

a numerical value or not by using Exception class.(Hint: Use NumberFormatException)

**Application**

1. Write a program to create 10 accounts& transfer funds among the account if transaction amount is negative the program raises an negative\_ amount exception. If the account balance is less than the requested transaction amount, an insufficient\_ funds Exception is Raised.

2. Write a program that creates three threads named Thread A, ThreadB, ThreadC that print the letters A, B, C respectively. the program sets priority norm\_ priority for ThreadA, norm\_ priority+1 for ThreadB norm\_ priority+2 for ThreadC

**Analysis**

1. Can we call a sleep () method using sub class object .

2. Can we provide communication among the different threads and justify?

**Unit V**

**Straightforward (Knowledge)**

1. Describe the AWT class hierarchy.

2. Explain briefly about delegation event model.

3. Explain about adapter classes.

4. List the differences between frame, panel, & window classes.

**Hard (Comprehension)**

1. Write a program to handle various mouse & key board events.

2. Draw a circle with radius 50 & fill with violet color.

3. Why do you need to use layout managers? Discuss about various layout managers.

**Application**

1. Create a calculator by using grid layout to implement +,-,\*, /, sqrt, square, % functions.

**Unit VI**

**Straightforward (Knowledge)**

1. Define an applet.

2. Discuss about lifecycle of an applet.

3. Write the procedure to create and pass parameters to an applet

4. Define the following terms:

a) Socket b) port c) address d) datagram

5. Write the procedure to establish a communication between client and server.

**Hard (Comprehension)**

1. Write a simple client server program (one way communication).

2. Write a program that will take a string from command line arguments in order to check whether it is palindrome.

3. Write client, server programs. Client sends radius of a circle to the server. Server calculates area of a circle and sends result to the client.

**Application**

1. Write an applet program that enters two numbers in two text fields and displays their sum in the third text field when you press the add button using awt controls.

**Question Bank:**

**UNIT I**

1. Define the following terms:

Class, Object, Garbage Collection, this, Constructor and Overloading.

2. Specify the types of access control.

3. Explain about the main concepts of object-oriented programming.

4. Explain various data types and operators in Java in detail with suitable examples.

5. List out the java buzzwords and explain in detail.

6. Write a program for multiplying two matrices.

7. Write a program to demonstrate different types of parameter passing.

8. Write a program for constructor overloading.

9. Does java supports operator overloading? Justify your answer.

10a). Write about the data types supported by Java?

b). How a for loop can be defined and used within the program? Explain with suitable examples.

11a). What is a class? How does it accomplish data hiding?

b). Explain the difference between an object and a class.

c). What is a constructor? What are its special properties?

12a). Write about automatic type conversion and explain when casting is needed?

b) What is meant by overloading methods? What are the advantages of over loading concept?

c) Write a method find Area that can find the area of the circle /square/rectangle using overloading concept.

13a). Distinguish between arrays and strings.

b). Write down the syntax & working procedure of loop structures while &

do - while in Java.

14a). Write a note on the various access mechanisms that are used to access data and methods in a class.

b). Write a Java program to delete an element from a given array.

c). Write a Java program to find the determinant of a given matrix.

15a). Define an array. In Java, how the arrays of different dimensions can be

created and initialized?

b). Write about the usages of the keyword ‘final’ in Java.

c). Does Java support recursion? Justify with valid reasons.

16a). Illustrate the usage of different types of jump statements like break, continue and

return statements in java program with examples.

b). An integer is a perfect number it its factors including on and itself sums to two

times the number. Write a program to read a number and print whether it is perfect

or not.

17a). Write a class to find factorial of a number using recursion. Write a program to test

your class.

(b) Can java run on any machine? If yes, what is needed to run java on computer

explain in detail.

18a). Write a java program to find GCD(Greatest Common Divisor) and LCD(Least

common Multiplier) of two numbers.

b). Write a class called Complex to perform addition and multiplication on complex

numbers. Write a program to test your class.

(c) Explain how a break statement can be used as go to statement in a java program

with an example?

**UNIT II**

1. Define an inheritance and mention types of inheritances.

2. What are benefits of inheritance?

3. Explain the following keywords.

a) final b) finalize c) Super d) Polymorphism

4. Explain briefly member access rules. .

5. Write a java program that illustrates the concept of method overriding.

6. Write a java program that demonstrates the use of “super” keyword. (three uses)

7. Write a program to demonstrate dynamic method dispatch (ie., dynamic

polymorphism).

8. Does java supports multiple inheritance and justify.

9. Can we override the final method?

10a). How can you prevent a method from overriding?

b). When will you use the keyword super?

11a). What is multiple inheritance? Explain how does Java support multiple inheritance?

b). Contrast: Method overriding Vs. method overloading.Which is necessary for

runtime polymorphism? Justify?

12. Differentiate between abstract and non-abstract methods in java with example.

13a). What are the differences between private, final and static variables?

b). Explain about Dynamic Method Dispatch.

14a). Write about the usages of the keyword ‘final’ in Java.

b). Write a Java program to illustrate the usage of super to access the member of a

super class that has been hidden by a member of a subclass.

**UNIT III**

1. Define an interface.

2. List the differences between class and interface.

3. Define the following keywords.

a) implements b) extends

4. Define a package.

5. Write the procedure to create a package and importing a package.

6. Write a program to implement an interface for calculating an area of triangle,

rectangle and circle.

7. Create a class student for calculating average marks and store it in the package

snist.org.

8. Write an interface called shape with necessary methods. Derive classes Circle,

Rectangle, Triangle, Cone and Sphere with appropriate constructors and methods for

finding Area, Volume, also for setting and displaying values.

9. What is an interface? What is the major difference between an interface and class?

10a). Describe the various forms of implementing interfaces. Give examples of java

code for each case.

b). What is multiple inheritance? Explain how does Java support multiple inheritance?

11a). What is package? Explain how to import packages in a program with suitable

example.

b). List out the features of packages.

12a). Write a Java program to explain how one interface can extend another interface.

b). Give general form of the package statement. Give an example package creation

statement.

13. Give general form of a multileveled package statement. What is the significance of

the CLASSPATH environment variable in creating/using a package?

**UNIT IV**

1. Define an exception.

2. Write the use of an exception handling.

3. Explain about the following keywords.

a) try b) catch c) throw d) throws e) finally

4. Define a thread.

5. Explain the life cycle of a thread.

6. Write a procedure to create a thread using Thread and Runnable interface.

7. Discuss about various methods of a thread class.

8. Write a program to handle ArrayIndexOutOfBoundsException,DividebyZeroExceptions.

9. Write a program that takes input from the user and checks whether the given input is

a numerical value or not by using Exception class.(Hint: Use NumberFormatException)

10. Can we call a sleep () method using sub class object .

11. Can we provide communication among the different threads and justify?

12a). Define exception, Explain about different types of exceptions in java.

b). Explain about different types of exception handling techniques in java program.

13a). Write a program to create a user-defined exception.

b). Explain the following exceptions with the help of examples:

(i) ArithmeticException (ii) NullPointerException

(iii) NumberFormatException. (iv)ArrayIndex Out of Bounds Exception.

14a). what is difference between unchecked and checked exceptions in Java. Give any three

example of each.

b). Demonstrate how exceptions are thrown,Write a program to demonstrate the concept of

rethrowing an exception?

c). Describe with the help of a diagram the exception class hierarchy.

15. Define thread. Explain about the steps for creating multithreads using java program.

16. Explain about different types of methods of a thread classes in java,Write a java to

demonstrate thread priorities.

17. Explain different ways to implement multithreading in java using illustrative examples.

18. Differentiate between synchronized methods and synchronized statements.

19a). Explain briefly how to suspend, resume and stop threads.

b). Write a program to Demonstrate interthread communication. (Producer con-sumer

problem)

20a). Why thread is called light weight task and process heavy weight task.

b). What are the different things shared by different threads of a single process,What are the

benefits of sharing?

c). Is multithreading suitable for all types of applications. If yes explain any such application.

If no, explain any application for which multithreading is not desired.

21. Write a program that creates three threads. First thread prints the numbers from 1-25, second

from 26-50 and the third thread prints the numbers from 50-1. Explain the output.

22a). List & explain the various methods defined by the thread class with examples of each?

b). Describe the life cycle of a thread?

**UNIT V**

1. Describe the AWT class hierarchy.

2. Explain briefly about delegation event model.

3. Explain about adapter classes.

4. List the differences between frame, panel, & window classes.

5. Write the procedure to create and pass parameters to an applet.

6. Write a program to handle various mouse & key board events.

7. Draw a circle with radius 50 & fill with violet color.

8. Why do you need to use layout managers? Discuss about various layout managers.

9 a) Explain with example any two ways of drawing polygons.

b) Explain following AWT classes with methods defined in them.

i. Font ii.Color iii.Graphics iv.Menu

10 a) Write a Java program to draw circle, oval, arc and rectangle with and without

filling. Explain the output.

b) Explain the following components in swing.

i. Container ii. Component iii. Panel iv. Frame

11 a) Explain the reason of creating a subclass of Frame is preferred over creating an instance of

Frame when creating a window.

b) Explain the steps in creating a subclass of frame with the help of examples.

c)Write a program to create 4 x 4 grid and fills it in with the 15 buttons, each lable with its

index.

12 a) Define event. Explain about different types event classes in classes.

b) Explain about the component event class and container event classes in java.

13 a) Explain about different types of event sources in java.

b) Write a java program to demonstrate mouse event handling.

14. Write short notes on the following:

a) Events b) Event sources c) Event classes d) Delegation event model.

15. Explain in detail about the following event classes:

a) KeyEvent b) ItemEvent c) FocusEvent

16 a) Describe the ActionEvent , the AdjustmentEvent, the ComponentEvent and the

ContainerEvent classes along with their methods and constructors.

b)Write a java program to demonstrate key event handler.

**UNIT VI**

1. Define an applet.

2. Discuss about lifecycle of an applet.

3 a) Define applet. Write a java program that shows applet skeleton.

b) Write a java program that shows simple applet that sets the foreground and background

colors and out puts a string

c) Explain about passing of parameter to applets using a java program.

4 a) Explain different ways of executing applets in java.

b) Write an applet program that scrolls a message from right to left, across the applet’s

window.

c) Write a simple program to demonstrate applet life-cycle.

5 a) Explain the different steps in the life cycle of an applet.

b) Develop an applet that receives three numeric values as inputs from the user and then

displays the largest of three on the screen. Write a HTML program and test the applet.

6 a) Differentiate between Applet and application. Explain limitations of applet.

b) Give general structure of applet with various methods of Applet class. Explain execution

order of these methods with a suitable example.

c) Develop an applet that takes two integers as input and displays Sum and Product of

numbers.

7. Define the following terms:

a) socket b) port c) address d) datagram

8. Write the procedure to establish a communication between client and server.

9. Write a simple client server program (one way communication).

10. Write a program that will take a string from command line arguments in order to

check whether it is palindrome.

11. Write client, server programs. Client sends radius of a circle to the server. Server

calculates area of a circle and sends result to the client.

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**Sreenidhi Institute of Science & Technology**

**A 12**

(An Autonomous Institution)

**Code No: 3EC03**

**B. TECH. II – Year I – Semester Examinations, December, 2013 ( Regular )**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA ( CSE, IT & ECM)**

**Time: 3 Hours Max. Marks : 70**

**Note : No additional answer sheets will be provided.**

**Part-A (Objective Type) Max.Marks:20**

**Answer all QUESTIONS.**

1. How java is strongly associated with the internet?

2. What is a method? Explain with example?

3. What is inheritance and list the types of inheritance?

4. Write the names of different packages provided by java API?

5. Write about variables in interface?

6. Mention the benefits of exception handling?

7. What are daemon threads?

8. List various components of user interface?

9. Differences between applets and application?

10. What is the use of “*this”* keyword?

**Part – B Max. Marks: 50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. a. What is the difference between a public member and a private member of a class? [5+5]

b. What is a constructor ? What are its special properties?

1. a. Write a programe to illustrate method overriding? [5+5]

b. Define abstract class ? Explain with suitable example?

3. a. How do we add a class or interface to a package? Explain. [5+5]

b. How to extend one interface by the other interface? Explain with an example?

4. a. Explain ‘throws’ statement in java with the help of an example? [5+5]

b. How do you create your own exception classes? Discuss with an example?

5. a. What is a thread group and explain its importance with a programme?[5+5]

b. Write a programme that demonstrates the priority settings in threads?

6. a. Write a java programme to illustrate interface components? [5+5]

b. Write briefly about grid layout manager?

7. a. Explain the process of creating an applet? [5+5]

b. Write a programme to handle all mouse related events?

8. a. Demonstrate file output stream with example? [5+5]

b. Explain in detail about following methods

i) super key word ii) instance methods

**-- 00 -- 00 --**

**A12**



**Sreenidhi Institute of Science & Technology**

(An Autonomous Institution)

**Code No:3EC03**

**B. TECH. II – Year I – Semester Examinations, Dec/Jan 2015 (Supplementary)**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA**

**(Common to CSE, IT and ECM)**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part - A Max.Marks:20**

**Answer all QUESTIONS.**

1. Explain constructor with an example.
2. Explain the use of super keyword.
3. Differentiate a class and an interface.
4. Explain the use of the finally keyword.
5. Explain the steps involved in creating a checkbox.
6. Explain life cycle of an applet.
7. How can threads be created?
8. What is garbage collection? How is it achieved in Java?
9. What is an abstract class?
10. What is the difference between paint() and repaint() methods?

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. a) Write a program to convert the given temperature in Fahrenheit to Celsius using the following conversion formula C = (F - 32)/1.8 and display the values in a tabular form.

b) Differentiate class and an object.

1. Explain with an example:

a) Compile time polymorphism

b) Run time polymorphism

1. a) How do we add a class or an interface to a package?

b) How is multiple inheritance achieved in Java?

1. a) Explain with an example the use of try, catch and throw keywords.

b) Why is thread called light weight task and process called heavy weight task.

1. a) Write a program to create an applet.

b) How can the parameters be passed to an applet?

1. a) What is the use of adapter classes?

b) Explain Gridlayout with an example.

1. a) Explain the use of Buffered Reader.

b) What are the methods supported by key listener interface and mouse listener interface?

1. a) What are objects? How are they created from a class?

b) Explain StringTokenizer with an example.



**A12**

**A12**

**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 3EC03**

**B. TECH. II-Year I-Semester Examinations, December 2015 (Supplementary)**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA (CSE, IT & ECM)**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part - A**

**Max.Marks:20**

**Answer all QUESTIONS.EACH QUESTION CARRIES 2 MARKS.**

1. What are the types of applets?

2. What is the difference between String and StringBuffer?

3. [Define](http://www.journaldev.com/1330/java-collections-interview-questions-and-answers#arraylist-vs-vector) Package.

4. Which container use a FlowLayout as their default layout.

**5. What is a daemon thread?**

6. How is a local variable different from an instance variable?

7. What is an abstract class?

8. Write the important interfaces in java.lang package.

9. What is checked exception in java?

10 What is use of Adapter classes?

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. **Explain the concept of adapter class with an example.**
2. Write a Java program that implements a simple client/server application for the client sends an integer to a server. The server receives it , computes the factorial of it ,and then sends the result back to the client. The client displays the result on the console.
3. **Explain about**

**a) Primitive Data types b) Comparator**

1. **Explain about a) Life cycle of Thread b) Life cycle of Applet.**
2. What is a StringTokenizer? Discuss the different constructors of it with suitable example.
3. a) Differentiate abstract class and interface.

b) Explain the dynamic method dispatch with example.

1. a) Explain creation of a package and importing a package.

b) Write a java program to read an alphabet from console and write ascii value of it to console

1. a) What is a thread? Illustrate with an example the role of multi threading.

b) Write a program to create and use an user defined exception.

**-- 00 -- 00 --**



**SET 1**

**A14**

**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No: 4EC03**

**B. TECH. II-Year I-Semester Examinations, December 2015 (Regular)**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA (CSE)**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part - A Max.Marks:20**

**Answer all QUESTIONS.EACH QUESTION CARRIES 2 MARKS.**

1. How is a local variable different from an instance variable?
2. What is an abstract class?
3. Write the important interfaces in java.lang package.
4. What is checked exception in java?
5. What is use of Adapter classes ?
6. What are the types of applets?
7. What is the difference between String and StringBuffer?
8. [Define](http://www.journaldev.com/1330/java-collections-interview-questions-and-answers#arraylist-vs-vector) Package.
9. Which container use a FlowLayout as their default layout.

**10. What is a daemon thread?**

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. What is a StringTokenizer? Discuss the different constructors of it with suitable example.
2. a) Differentiate abstract class and interface.

b) Explain the dynamic method dispatch with example.

1. a) Explain creation of a package and importing a package.

b) Write a java program to read an alphabet from console and write ascii value of it to console

1. a) What is a thread? Illustrate with an example the role of multi threading.

b) Write a program to create and use an user defined exception.

1. **Explain the concept of adapter class with an example.**
2. Write a Java program that implements a simple client/server application for the client sends an integer to a server. The server receives it , computes the factorial of it ,and then sends the result back to the client. The client displays the result on the console.
3. **Explain about**

**a) Primitive Data types b) Comparator**

1. **Explain about a) Life cycle of Thread b) Life cycle of Applet.**

**-- 00 -- 00 --**

**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Regulations:**

**A14**

**Code No:4EC03 Date:17-Nov-16**

**B. TECH. II-Year I-Semester Examinations, Nov/Dec 2016 (Supplementary)**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA**

**(Common to CSE, IT and ECM)**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part - A Max.Marks:20**

**Answer all QUESTIONS.EACH QUESTION CARRIES 2 MARKS.**

1 What is a class and its instance?

2 List out the benefits of Inheritance?

3 Differentiate between predefined packages and user defined packages.

4 Write the hierarchy of Exception class.

5 Why AWT components are called as heavy weight components?

6 List out the differences between applet programs and application programs.

7 Why threads are called light weight?

8 What is difference between String and String Buffer Class?

9 Write brief notes on JButton class.

10 State the differences between classes and interfaces.

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1 a) Write a program to delete the duplicate elements in a given array.

b) Write short notes on Java Buzzwords

2 a) Explain method overriding in detail with example.

b) Write a program to demonstrate the concept of multilevel inheritance.

3 a) Explain the procedure for the creation of a user defined package with an example

b) Explain the concept of interfaces in collections.

4 a) What is exception handling? Explain multiple catches for single try block with suitable example.

b) Explain the thread Life cycle.

5 a) Explain various swing components.

b) Describe about Event delegation model.

6 a) Explain the Applet life cycle

b) Develop an applet that receives two numerical values as input from the user and displays the sum of these numbers on the screen. Write the HTML code that calls the applet

7 a) Write a java program to print prime numbers with in the given limits.

b) Write a program to find out the sum of the all the elements in a given array by using recursion.

8 a) Explain the concept of abstract class with an example.

b) Write short notes on final keyword.

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**Sreenidhi Institute of Science and Technology**

**Regulations:**

**A15**

(An Autonomous Institution)

**Code No: 5E302 Date:21-Nov-16**

**B. TECH. II-Year I-Semester Examinations, Nov/Dec 2016 (Regular)**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA (Common to CSE, IT and ECM)**

**Time: 3 Hours Max. Marks: 75**

**Note: No additional answer sheets will be provided.**

**Part - A Max.Marks:25**

**Answer all QUESTIONS**

1. What is Abstraction and Polymorphism? [3M]
2. **What are the uses of wrapper classes? List various wrapper classes.** [3M]
3. **Where can the keyword static be used. What will happen if it is used before**

**method and before variable declaration?** [3M]

1. **List few components in swings and awt.** [3M]
2. **Describe the procedure for establishment of connection between server and client.** [3M]
3. **Explain how method overloading is different from method overriding with suitable example.** [2M]
4. **List out the ways the event delegation process can be done.** [2M]
5. **Distinguish primitive data types and derived data type with examples.** [2M]
6. **List and explain the classes used for client server programming.** [2M]
7. **Explain what classes are used for exception handling?** [2M]

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. **a) What is the role of a constructor? Why constructors do not have a return type? Can we have a private constructors? Justify your answers.** [6M]

**b) List various primitive data types. What are enumerated data types? Give Examples.** [4M]

1. **a) What is abstract method and abstract class?** [4M]

**b) What is the use of interface? Discuss the differences between classes and**

**interfaces with examples.** [6M]

**3.a) Create a package, inherit the classes of that package and override those methods.** [4M]

**b) What the different classes in io package discuss them.** [6M]

1. **a) Demonstrate the use of final, finally in java ?** [3M]

**b) What is exception handling? How exception handling is useful. Create a user defined**

**Exception to alert the user whenever user types wrong number of mobile digits**

**(<10 or >10) in an applet.** [7M]

1. **a) Explain basic differences between swings and awt with examples.** [5M]

**b) When will the adapter classes and listener interfaces be used event handling?**

**Explain with suitable examples.** [5M]

1. **a) Explain life cycle of applet. Create an applet to demonstrate the card layout.** [6M]

**b) What is the procedure to write a client server program in java? Give example.** [4M]

1. **a) Write a program to append contents of two files into new file.** [5M]

**b) Write a java program to copy contents of a file into another file.** [5M]

1. **a) Create a client server program such that client will enter some text, whereas**

**the server should count number of characters, words, digits, sentences and respond to client request.** [5M]

**b) Why thread priority is so important? Give a sample program to create multiple**

**threads with multiple priorities.** [5M]

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**Sreenidhi Institute of Science and Technology**

**Regulations:**

**A15**

(An Autonomous Institution)

**Code No: 5E302 Date:09-Nov-2017 (FN)**

**B.Tech II-Year I-Semester External Examination, Nov - 2017 (Regular)**

**Object Oriented Programming through Java (CSE, IT & ECM)**

**Time: 3 Hours Max.Marks:75**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**Part - A Max.Marks:25**

**Answer all QUESTIONS.**

|  |  |  |
| --- | --- | --- |
| 1 | List out the various data types with their ranges. | [3M] |
| 2 | Write short notes on interfaces. | [3M] |
| 3 | What is package? Give an example. | [3M] |
| 4 | Define exception handling and write its benefits. | [3M] |
| 5 | Explain about DelegationEvent Model. | [3M] |
| 6 | Write a simple program to send a file from server to client. | [2M] |
| 7 | What is the difference between method overloading and method overriding? | [2M] |
| 8 | List out the methods of Input Stream. | [2M] |
| 9 | What are the advantages of GUI over CUI? | [2M] |
| 10 | Explain the significance of finally keyword. | [2M] |

**Part – B Max.Marks:50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | a) | What is type conversion and casting? Explain with an example. | [5M] | |
|  | b) | Explain String handling methods with an example. | | [5M] | |
|  |  |  | |  | |
| 2 | a) | Explain all types of inheritance with example for at least two of them. | | [5M] | |
|  | b) | Explain Dynamic Dispatch Method with an example. | | [5M] | |
|  |  |  | |  | |
| 3 | a) | Explain map interface with an example. | | [5M] | |
|  | b) | Explain Date and Calendar classes with an example. | | [5M] | |
|  |  |  | |  | |
| 4 | a) | Explain synchronizing threads with an example. | | [5M] | |
|  | b) | How do you create your exception classes? Explain with an example. | | [5M] | |
|  |  |  | |  | |
| 5 | a) | Write a program to handle various keyboard events. | | [5M] | |
|  | b) | Explain any two layout managers with an example. | | [5M] | |
|  |  |  | |  | |
| 6 | a) | Write a program to send and receive messages between multiple clients through a server. | | [5M] | |
|  | b) | Explain the life cycle of an applet with an example. | | [5M] | |
|  |  |  | |  | |
| 7 | a) | Explain garbage collection with an example. | | [3M] | |
|  | b) | Explain String Tokenizer with an example. | | [4M] | |
|  | c) | Explain usage of super keyword with an example. | | [3M] | |
|  |  |  | |  | |
| 8 | a) | Write a program to create a thread using Runnable Interface. | [4M] | |
|  | b) | Explain AWT hierarchy. | [4M] | |
|  | c) | Define socket. Give its syntax. | [2M] | |

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**Regulations:**

**A14**

**H.T No**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No:4EC03 Date: 07-July-2022 (FN)**

**B.Tech II-Year I- SemesterPending External Examination, July - 2022 (Supplementary)**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA (CSE, IT and ECM)**

**Time: 3 Hours Max.Marks:70**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**ANSWER ANY 5 OUT OF 8 QUESTIONS. EACH QUESTION CARRIES 14 MARKS.**

**Bloom's Cognitive Levels of Learning (BCLL)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Remember | L1 | Apply | L3 | Evaluate | L5 |
| Understand | L2 | Analyze | L4 | Create | L6 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **BCLL** | **CO(s)** | **Marks** |
| 1. | a) | What is the role of a constructor? Why constructor do not have a return type? Can we have a private constructors? Justify your answers. | L2 | CO1 | [7M] |
|  | b) | **List various primitive data types. What are enumerated data types? Give Examples.** | L1 | CO1 | [7M] |
|  |  |  |  |  |  |
| 2. | a) | **What is abstract method and abstract class?** | L2 | CO2 | [7M] |
|  | b) | **Explain the dynamic method dispatch with example.** | L2 | CO2 | [7M] |
|  |  |  |  |  |  |
| 3. | a) | **Create a package, inherit the classes of that package and override those methods.** | L3 | CO3 | [7M] |
|  | b) | What is exception handling? How exception handling is useful. Create a user defined Exception to alert the user whenever user types wrong number of mobile digits (<10 or >10)in an applet. | L2 | CO3 | [7M] |
|  |  |  |  |  |  |
| 4. | a) | **Demonstrate the use of final, finally in java ?** | L4 | CO4 | [7M] |
|  | b) | Create a simple applet to display whether the number entered in a text box is prime or not on clicking check button. | L4 | CO4 | [7M] |
|  |  |  |  |  |  |
| 5. | a) | Create a client server program such that client will enter some text, whereas the server should count number of characters, words, digits, sentences and respond to client request. | L4 | CO5 | [7M] |
|  | b) | **Explain the concept of adapter class with example.** | L2 | CO5 | [7M] |
|  |  |  |  |  |  |
| 6. | a) | **Explain life cycle of applet. Create an applet to demonstrate the card layout.** | L2 | CO6 | [7M] |
|  | b) | **Explain basic differences between swings and awt with examples.** | L2 | CO6 | [7M] |
|  |  |  |  |  |  |
| 7. | a) | **Write a program to append contents of two files into new file.** | L1 | CO1 | [7M] |
|  | b) | Why thread priority is so important? Give a sample program to create multiple threads with multiple priorities. | L2 | CO2 | [7M] |
|  |  |  |  |  |  |
| 8. | a) | **What the different classes in net package?And io package discuss them.** | L2 | CO4 | [7M] |
|  | b) | **What is the procedure to write a client server program in java? Give example.** | L2 | CO5 | [7M] |

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**Regulations:**

**A15**

**H.T No**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No:5E302 Date: 07-July-2022 (FN)**

**B.Tech II-Year I- Semester Pending External Examination, July - 2022 (Supplementary)**

**Object Oriented Programming through Java (CSE, IT and ECM)**

**Time: 3 Hours Max.Marks:75**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**ANSWER ANY 5 OUT OF 8 QUESTIONS. EACH QUESTION CARRIES 15 MARKS.**

**Bloom's Cognitive Levels of Learning (BCLL)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Remember | L1 | Apply | L3 | Evaluate | L5 |
| Understand | L2 | Analyze | L4 | Create | L6 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **BCLL** | **CO(s)** | **Marks** |
| 1. | a) | What is the role of a constructor? Why constructor do not have a return type? Can we have a private constructors? Justify your answers. | L2 | CO1 | [8M] |
|  | b) | **List various primitive data types. What are enumerated data types? Give Examples.** | L1 | CO1 | [7M] |
|  |  |  |  |  |  |
| 2. | a) | **What is abstract method and abstract class?** | L2 | CO2 | [8M] |
|  | b) | **Explain the dynamic method dispatch with example.** | L2 | CO2 | [7M] |
|  |  |  |  |  |  |
| 3. | a) | **Create a package, inherit the classes of that package and override those methods.** | L3 | CO3 | [8M] |
|  | b) | What is exception handling? How exception handling is useful. Create a user defined Exception to alert the user whenever user types wrong number of mobile digits (<10 or >10)in an applet. | L2 | CO3 | [7M] |
|  |  |  |  |  |  |
| 4. | a) | **Demonstrate the use of final, finally in java ?** | L4 | CO4 | [8M] |
|  | b) | Create a simple applet to display whether the number entered in a text box is prime or not on clicking check button. | L4 | CO4 | [7M] |
|  |  |  |  |  |  |
| 5. | a) | Create a client server program such that client will enter some text, whereas the server should count number of characters, words, digits, sentences and respond to client request. | L4 | CO5 | [8M] |
|  | b) | **Explain the concept of adapter class with example.** | L2 | CO5 | [7M] |
|  |  |  |  |  |  |
| 6. | a) | **Explain life cycle of applet. Create an applet to demonstrate the card layout.** | L2 | CO6 | [8M] |
|  | b) | **Explain basic differences between swings and awt with examples.** | L2 | CO6 | [7M] |
|  |  |  |  |  |  |
| 7. | a) | **Write a program to append contents of two files into new file.** | L1 | CO1 | [8M] |
|  | b) | Why thread priority is so important? Give a sample program to create multiple threads with multiple priorities. | L2 | CO2 | [7M] |
|  |  |  |  |  |  |
| 8. | a) | **What the different classes in net package?And io package discuss them.** | L2 | CO4 | [8M] |
|  | b) | **What is the procedure to write a client server program in java? Give example.** | L2 | CO5 | [7M] |

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**Regulations:**

**A17**

**H.T No**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No:6E302 Date: 07-July-2022 (FN)**

**B.Tech II-Year I- Semester Pending External Examination, July - 2022 (Supplementary)**

**Object Oriented Programming through Java (CSE, it and ECM)**

**Time: 3 Hours Max.Marks:75**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**ANSWER ANY 5 OUT OF 8 QUESTIONS. EACH QUESTION CARRIES 15 MARKS.**

**Bloom's Cognitive Levels of Learning (BCLL)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Remember | L1 | Apply | L3 | Evaluate | L5 |
| Understand | L2 | Analyze | L4 | Create | L6 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **BCLL** | **CO(s)** | **Marks** |
| 1. | a) | What is the role of a constructor? Why constructor do not have a return type? Can we have a private constructors? Justify your answers. | L2 | CO1 | [8M] |
|  | b) | **List various primitive data types. What are enumerated data types? Give Examples.** | L1 | CO1 | [7M] |
|  |  |  |  |  |  |
| 2. | a) | **What is abstract method and abstract class?** | L2 | CO2 | [8M] |
|  | b) | **Explain the dynamic method dispatch with example.** | L2 | CO2 | [7M] |
|  |  |  |  |  |  |
| 3. | a) | **Create a package, inherit the classes of that package and override those methods.** | L3 | CO3 | [8M] |
|  | b) | What is exception handling? How exception handling is useful. Create a user defined Exception to alert the user whenever user types wrong number of mobile digits (<10 or >10)in an applet. | L2 | CO3 | [7M] |
|  |  |  |  |  |  |
| 4. | a) | **Demonstrate the use of final, finally in java ?** | L4 | CO4 | [8M] |
|  | b) | Create a simple applet to display whether the number entered in a text box is prime or not on clicking check button. | L4 | CO4 | [7M] |
|  |  |  |  |  |  |
| 5. | a) | Create a client server program such that client will enter some text, whereas the server should count number of characters, words, digits, sentences and respond to client request. | L4 | CO5 | [8M] |
|  | b) | **Explain the concept of adapter class with example.** | L2 | CO5 | [7M] |
|  |  |  |  |  |  |
| 6. | a) | **Explain life cycle of applet. Create an applet to demonstrate the card layout.** | L2 | CO6 | [8M] |
|  | b) | **Explain basic differences between swings and awt with examples.** | L2 | CO6 | [7M] |
|  |  |  |  |  |  |
| 7. | a) | **Write a program to append contents of two files into new file.** | L1 | CO1 | [8M] |
|  | b) | Why thread priority is so important? Give a sample program to create multiple threads with multiple priorities. | L2 | CO2 | [7M] |
|  |  |  |  |  |  |
| 8. | a) | **What the different classes in net package?And io package discuss them.** | L2 | CO4 | [8M] |
|  | b) | **What is the procedure to write a client server program in java? Give example.** | L2 | CO5 | [7M] |

**-- 00 -- 00 –**

**Regulations:**

**A18**

**H.T No**



**Sreenidhi Institute of Science and Technology**

(An Autonomous Institution)

**Code No:7EC02 Date: 08-Mar-2022 (FN)**

**B.Tech II-Year I- Semester External Examination, March/April-2022 (Regular&Supplementary)**

**OBJECT ORIENTED PROGRAMMING THROUGH JAVA (CSE and IT)**

**Time: 3 Hours Max.Marks:70**

***Note: a****) No additional answer sheets will be provided.*

*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*

*c) Missing data can be assumed suitably.*

**ANSWER ANY 5 OUT OF 8 QUESTIONS. EACH QUESTION CARRIES 14 MARKS.**

**Bloom's Cognitive Levels of Learning (BCLL)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Remember | L1 | Apply | L3 | Evaluate | L5 |
| Understand | L2 | Analyze | L4 | Create | L6 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | **BCLL** | **CO(s)** | **Marks** |
| 1. | a) | Explore the methods of StringTokenizer Class and give examples. | L3 | CO1 | [7M] |
|  | b) | Distinguish between method overloading and method overriding. | L4 | CO1 | [7M] |
|  |  |  |  |  |  |
| 2. | a) | Discuss the concept of Dynamic method dispatch in Java Programming. | L2 | CO2 | [7M] |
|  | b) | Identify various access specifiers available in Java. Give examples for each. | L2 | CO2 | [7M] |
|  |  |  |  |  |  |
| 3. | a) | Write a Java Program to convert upper case letter to lower case and vice versa using files. | L4 | CO3 | [7M] |
|  | b) | Discuss the uses of FileInputReader class. | L2 | CO3 | [7M] |
|  |  |  |  |  |  |
| 4. | a) | Distinguish between Exception and Error. Discuss about exception handling in Java Programming. | L3 | CO4 | [7M] |
|  | b) | When to use Thread Class and Runnable interface for creation of Threads in Java? Give examples. | L5 | CO4 | [7M] |
|  |  |  |  |  |  |
| 5. | a) | Demonstrate the use of CardLayout and GridLayout in Swings. | L4 | CO5 | [7M] |
|  | b) | Discuss AWT Class Hierarchy. | L3 | CO5 | [7M] |
|  |  |  |  |  |  |
| 6. | a) | How applications are different from applets? Describe the use of each using suitable examples. | L4 | CO6 | [7M] |
|  | b) | Write a simple client server java program to demonstrate the communication of text between them. | L4 | CO6 | [7M] |
|  |  |  |  |  |  |
| 7. | a) | Explain the concept of classes in java. | L2 | CO1 | [5M] |
|  | b) | Explore the use of final keyword in Inheritance. | L2 | CO2 | [5M] |
|  | c) | Discusses any three of Java Collections. | L3 | CO3 | [4M] |
|  |  |  |  |  |  |
| 8. | a) | Explore the difference between serializable and synchronized keywords | L5 | CO4 | [5M] |
|  | b) | Write a simple java program to demonstrate the use of menubar. | L4 | CO5 | [5M] |
|  | c) | Describe the following:  i) Port ii) Socket | L2 | CO6 | [4M] |

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